

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for controlling a screening machine comprising a vibrating screen having at least one screen surface, said vibrating screen conveying material from a first end towards a second end, feeding means comprising a conveyor that feeds material to be screened towards the screen surface and at a fixed location in the first end onto the screen surface where the material is separated into a first fraction remaining on the screen surface and into a second fraction passed through the screen surface while the material is moving along the screen surface towards the second end, the method comprising:

determining the amount of material on the screen surface by automatic measurement;
and

controlling the ~~feeding~~ amount of material on the screen surface by adjusting the feeding conveying speed of the conveyor on the basis of the measurement by automatic control in such a manner that the ~~feeding conveying~~ speed, which is above zero, is changed to a different ~~feeding conveying~~ speed, which is above zero, in one of the following ways:

a) providing upper and lower preset values (val_{max} , val_{min}) for the measurement value (val_m) of a variable dependent on the amount of material on the screen surface,

lowering the conveying speed of the conveyor without stopping the conveyor when the measurement value (val_m) passes one of the preset values, and

increasing the conveying speed of the conveyor when the measurement value (val_m) passes the other preset value, or

b) providing a preset value ($(\Delta val_m / \Delta t)_{max}$) for a speed of change of the measurement value (val_m) of the variable dependent on the amount of material on the screen

surface, and

changing the conveying speed of the conveyor without stopping the conveyor when the speed of change of the measurement value (val_m) of the variable exceeds the preset value $((\Delta val_m / \Delta t)_{max})$.

2. (Previously Presented) The method according to claim 1, wherein determining the amount of material on the screen surface comprises

measuring a variable of the movement of the screen surface or a variable of the drive means of the screen surface causing the movement of the screen surface.

3. (Previously Presented) The method according to claim 1, wherein determining the amount of material on the screen surface comprises

measuring the load caused by the material on any processing unit of the screening machine or on any machine following the screening machine and extending the process of the screening machine and being connected to the control system of the screening machine.

4. (Previously Presented) The method according to claim 2, wherein measuring the load caused by the material on the screen comprises

measuring a variable of the screen drive means causing the transport or processing of the material on the screen surface.

5. (Previously Presented) The method according to claim 4, wherein the variable is a drive pressure, drive current or drive running speed.

6. (Previously Presented) The method according to claim 3, wherein the processing unit is any of the following: a discharge conveyor, a shredder, or a crusher.

7. (Previously Presented) The method according to claim 6, wherein measuring the load comprises measuring any of the following variables:

drive pressure of the discharge conveyor, shredder or crusher,

drive current of the discharge conveyor, shredder or crusher, or

running speed of the discharge conveyor, shredder or crusher.

8. (Previously Presented) The method according to claim 3, wherein the machine following the screening machine and extending the process of the screening machine and being connected to the screening machine's control system is any of the following:

a second screening machine,

a crushing machine, or

a conveying machine.

9. (Previously Presented) The method according to claim 3, wherein measuring the load comprises measuring the load on an engine caused by the material.

10. (Previously Presented) The method according to claim 3, wherein measuring the load comprises measuring the temperature of a hydraulic fluid of a hydraulic system.

11. (Previously Presented) The method according to claim 1, further comprising presetting a maximum speed and a minimum speed for the conveyor.

12. (Previously Presented) The method according to claim 1, further comprising: providing a predetermined maximum time (t_{\max}) for the measurement value (val_m) to be beyond the preset value; and

lowering the speed of the conveyor below a preset speed value when the measurement value (val_m) has been beyond the preset value for a period that exceeds the predetermined maximum time (t_{\max}).

13. (Previously Presented) The method according to claim 12, further comprising stopping the conveyor when the measurement value (val_m) has been beyond the preset value for the period.

14. (Currently Amended) A screening machine comprising a vibrating screen having at least one screen surface and adapted to convey material from a first end to a second end, feeding means comprising a conveyor arranged to feed material to be screened towards

the screen surface and at a fixed location in the first end onto the screen surface, the screen surface being capable of separating the material into a first fraction remaining on the screen surface and into a second fraction passed through the screen surface while the material is moving along the screen surface towards the second end, the screening machine further comprising:

a sensor arranged to measure a variable dependent on the amount of material on the screen surface;

a controller to which said sensor is connected through a data transmission line to receive a measurement value (val_m) related to said variable from the sensor; and

an actuator operatively connected to the conveyor and arranged to change the ~~feeding~~ conveying speed of the conveyor, wherein

said controller is connected to said actuator through a data transmission line and arranged to give a control command to said actuator in response to the measurement value (val_m) received from the sensor to change the ~~feeding~~ conveying speed of the conveyor, which is above zero, to a different ~~feeding~~ conveying speed, which is above zero, in one of the following ways:

a) an upper preset value (val_{max}) and a lower preset value (val_{min}) for the measurement value (val_m) are programmable and changeable in the controller and the controller is arranged to give a conveying speed reducing control command, which does not stop the conveyor, to the conveyor when the measurement value (val_m) passes one of the preset values (val_{max} , val_{min}), and a conveying speed increasing control command when the measurement value passes the other preset value, or

b) a preset value ($(\Delta val_m / \Delta t)_{max}$) for the speed of change of the measurement value (val_m) is programmable and changeable in the controller and the controller is arranged to give a conveying speed changing control command, which does not stop the conveyor, to

the conveyor when the speed of change exceeds the preset value $((\Delta v_{al_m}/\Delta t)_{max})$.

15. (New) The method according to claim 1, wherein the controlling of the amount of material on the screen is performed by both a) and b).

16. (New) The screening machine according to claim 14, wherein said controller changes the conveying speed of the conveyor by both a) and b).